

ABSTRACT OF THE DISCLOSURE

The electron beam proximity exposure apparatus comprises: an electron beam source which emits an electron beam; an electron beam shaping device which shapes the electron beam; a mask which has an aperture and is disposed on a path of the shaped electron beam; a deflecting and scanning device which deflects the electron beam to scan the mask with the shaped electron beam; and a stage which holds and moves an object, wherein the mask is disposed in proximity to a surface of the object, and a pattern corresponding to the aperture of the mask is exposed on the surface of the object with the electron beam having passed through the aperture, wherein the electron beam shaping device shapes the electron beam into a slender beam of which cross section has a small width in a direction of the scanning and a large width in a direction perpendicular to the direction of the scanning. Thus, in the electron beam proximity exposure apparatus, the responsiveness of the on-off control over the application of the electron beam can be improved with keeping the scanning width large without lowering the throughput of the exposure apparatus.

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